

1970

**OPERATING
SUMMARY**

PORT COLBORNE

water pollution control plant

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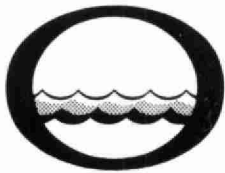
Division of Plant Operations

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Water management in Ontario

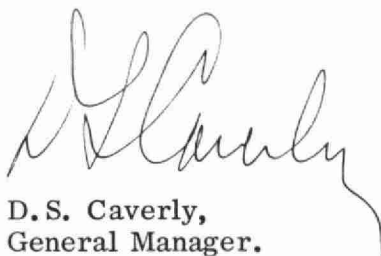
Ontario
Water Resources
Commission

135 St. Clair Ave. W.
Toronto 195
Ontario

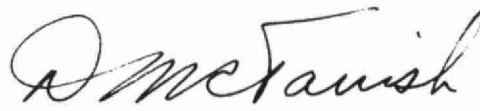
Once again we have the privilege of submitting to you our latest detailed report on financial progress and technical activity at your water pollution control plant.

The statistical information contained in this annual operating summary will undoubtedly be a useful barometer of efficiency. Of particular interest will be the comments and recommendations of the regional operations engineer, who was intimately connected with day-to-day operation throughout 1970.

Together with the extensive cost data provided, this information should assist greatly in your general understanding of the problems met and dealt with, and in furnishing a yardstick for possible future expansion.



D.S. Caverly,
General Manager.



D.A. McTavish, P. Eng.,
Director,
Division of Plant Operations.

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MAY 4 1971

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ONTARIO WATER RESOURCES COMMISSION

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PORT COLBORNE
water pollution control plant

operated for

THE CITY OF PORT COLBORNE

by the

ONTARIO WATER RESOURCES COMMISSION

1970 ANNUAL OPERATING SUMMARY

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'70 REVIEW

GENERAL

Construction on the Rosemount area project was near completion at year end. The work involved a complete replacement of the Elm Street Pumping Station, construction of two underground pumping stations, and sewer- ing of the entire area.

Difficulty was experienced in obtaining tenders for the required renova- tions at the East Side Plant. As a result the work was delayed and divided into two sections. Construction on phase one which involves modifications to the influent works and return sludge facilities will not take place until early 1971. E. G. Marsh Limited will be the main contractor for this work.

Modifications to the Fretz Park Pumping Station will be carried out to- gether with the installation of standby power facilities at the Elm Street Pumping Station under one contract in 1971.

The Regional Municipality of Niagara assumed responsiblity for the op- eration of the West Side and East Side Plants on December 1, 1970. The City owned pumping stations will be operated for the City by the Region under contract and the OWRC owned pumping stations will be operated by the Region for the Commission under an operating agreement.

PLANT FLOWS and CHLORINATION

West Side Plant

A total flow of 448.5 million gallons was treated, representing an increase of 12% over the previous year's flows. The average daily flow of 1.23 million gallons was 137% of the plant's design capacity of 0.9 mgd. De- spite this overloading, it was not necessary to bypass at any time during the year and a good quality effluent was produced.

FLOWS	DAILY FLOW mil gal	OCCURRING IN THE MONTH OF	MONTHLY FLOW mil gal	OCCURRING IN THE MONTH OF
Average	1.23	—	37.4	—
High	2.50	April	48.5	March
Low	.80	May June Dec.	30.5	June

East Side Plant

A total flow of 583.5 million gallons was treated, representing an increase of 11% over 1969 and 16% over 1968 treated flows. The average daily treated flows of 1.6 mg was 88% greater than the plant's design flow of 0.85 mgd.

FLOWS	DAILY FLOW mil gal	OCCURRING IN THE MONTH OF	MONTHLY FLOW mil gal	OCCURRING IN THE MONTH OF
Average	1.60	—	48.6	—
High	2.00	*	56.1	March
Low	1.20	July	42.1	June

* Jan. - Feb. - Mar. - Apr. - July - Sept. - Dec.

A portion of the raw sewage flows bypassed the treatment facilities on a continuous basis during the year. A magnetic flowmeter will be installed in the influent works early in 1971 and will record plant flows, thus enabling a determination of bypass quantities.

PLANT EFFICIENCY

West Side Plant

The average raw sewage strength was 103 mg/l and 121 mg/l suspended solids. This represents a BOD and suspended solids increase over the previous year respectively of 22 mg/l and 35 mg/l and indicates partial success by the City in removing storm water flows and infiltration from the collector system. The average effluent quality of 10 mg/l BOD and 8 mg/l suspended solids was similar to the effluent quality in 1969 and is excellent.

East Side Plant

The average BOD and suspended solids concentrations in the raw sewage were 77 mg/l and 99 mg/l respectively, representing an increase in the raw sewage strength of 32% BOD and 50% suspended solids over 1969. The effluent BOD and suspended solids concentrations of 9 mg/l and 12 mg/l respectively were similar to the effluent quality of the previous year and pertained only to the treated portion of the raw sewage flows. The combined treated and untreated effluent strength is necessarily considerably higher.

AERATION

West Side Plant

The average loading on the aeration section was 0.40 pounds of BOD per day per pound of MLSS, an increase in loading of approximately 17% over 1969. The average MLSS concentration was 1,420 mg/l.

East Side Plant

The average loading on the aeration section was 0.19 pounds of BOD per day per pound of MLSS, a decrease of approximately 42% from 1969. The average MLSS concentration was 2,570 mg/l.

SLUDGE DIGESTION and DISPOSAL

West Side Plant

A total of 763,000 gallons of raw sludge was digested in 1970. Approximately 55% of this volume was returned to the treatment process as supernatant. A total of 2,119 cubic yards of digested sludge was removed by haulage.

East Side Plant

A total of 1,154,000 gallons of raw sludge was digested. Approximately 97% of this volume was returned to the plant treatment process as supernatant. A total of 1,725 cubic yards of digested sludge was removed from the plant by haulage.

CONCLUSIONS

Both the West Side and East Side Plants were overloaded hydraulically during the year. Despite this, the West Side Plant treated all raw sewage flows directed to it and produced an excellent quality effluent. The East Side Plant treated only a portion of the raw sewage flows directed to it and produced a good quality "treated" effluent. Bypassing of the treatment facilities occurred on a continuous basis at the East Side Plant during the year.

A contract for the first phase of the renovation works at the East Side Plant has been let to E.G. Marsh Limited and will be completed early in 1971. The installation of metering to measure total plant flows will provide an indication of the severity of bypassing.

PROJECT COSTS

2-0047-59	
NET CAPITAL COST (Final)	\$625,008.36
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u> -</u>
Long Term Debt to OWRC	<u>\$625,008.36</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	<u>\$147,597.71</u>
Net Operating	\$106,960.25
Debt Retirement	12,613.00
Reserve	2,679.46
Interest Charged	<u>35,016.85</u>
TOTAL	<u>\$157,269.56</u>

RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 33,722.17
Deposited by Municipality	2,679.46
Interest Earned	<u>2,173.12</u>
	\$ 38,574.75
Less Expenditures	<u>3,175.37</u>
Balance @ December 31, 1970	<u>\$ 35,399.38</u>

PROJECT COSTS

2-0073-60	
NET CAPITAL COST (Final)	\$325,199.95
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>47,154.39</u>
Long Term Debt to OWRC	<u>\$278,045.56</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	<u>\$100,940.14</u>
Net Operating	\$ 43.45
Debt Retirement	10,088.00
Reserve	1,492.09
Interest Charged	<u>15,577.84</u>
TOTAL	<u>\$ 27,201.38</u>

RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 17,685.84
Deposited by Municipality	1,492.09
Interest Earned	<u>1,177.11</u>
	\$ 20,355.04
Less Expenditures	<u>-</u>
Balance @ December 31, 1970	<u>\$ 20,355.04</u>

PROJECT COSTS

2-0108-62	
NET CAPITAL COST (Final)	\$291,922.10
DEDUCT - Portion financed by CMHC/MDLB (Final)	<u>165,318.57</u>
Long Term Debt to OWRC	<u>\$126,673.53</u>
Debt Retirement Balance at Credit (Sinking Fund) December 31, 1970	\$ <u>39,573.08</u>
Net Operating	\$ 58.45
Debt Retirement	4,596.00
Reserve	1,051.63
Interest Charged	<u>7,097.04</u>
TOTAL	\$ <u>12,803.12</u>

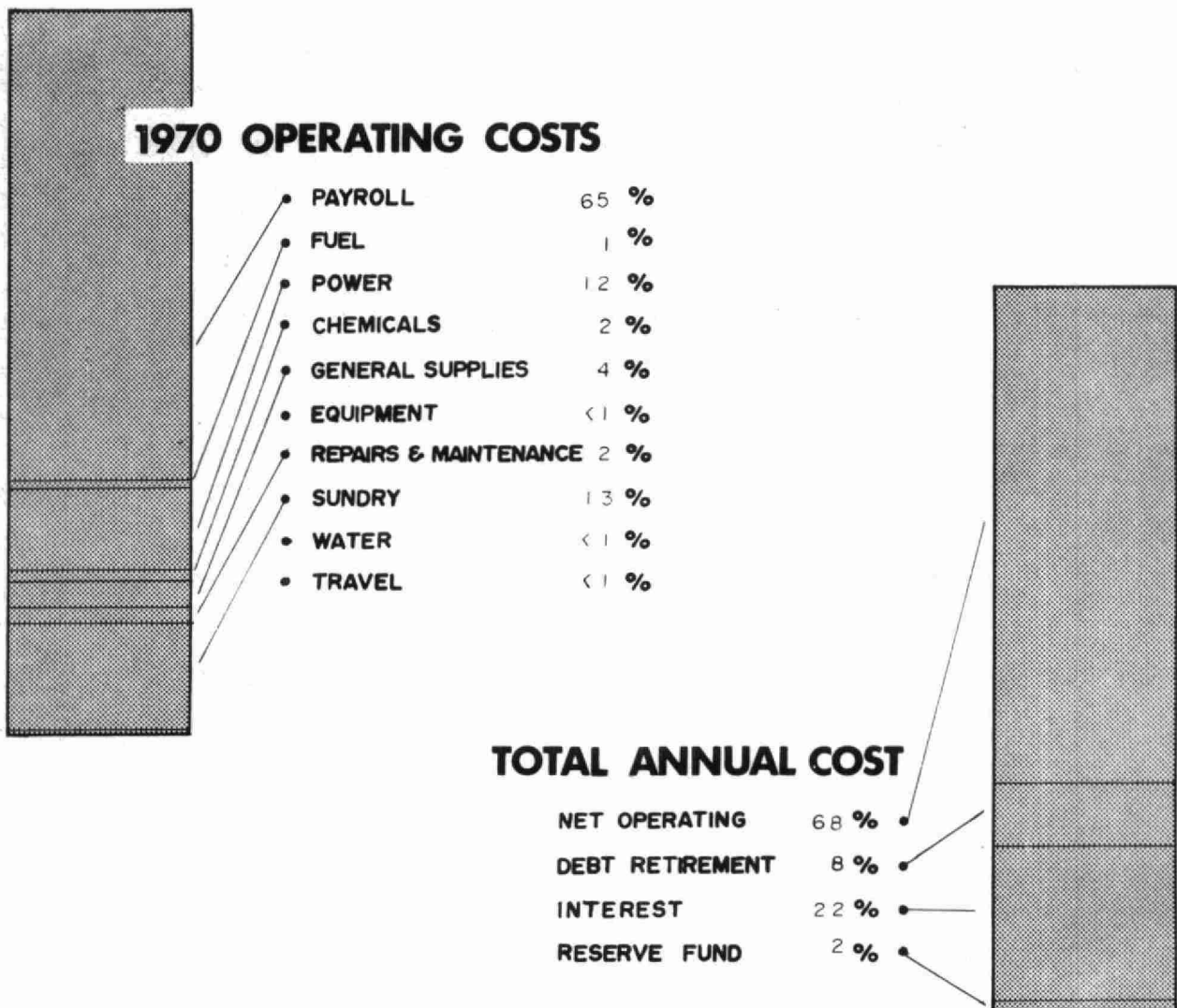
RESERVE ACCOUNT

Balance @ January 1, 1970	\$ 9,519.58
Deposited by Municipality	1,051.63
Interest Earned	<u>640.01</u>
	\$ 11,211.22
Less Expenditures	<u>-</u>
Balance @ December 31, 1970	\$ <u>11,211.22</u>

2-0047-59 (Special Operating Agreement)

RESERVE ACCOUNT

Balance @ January 1, 1970	\$10,728.84
Deposited by Municipality	4,686.37
Interest Earned	<u>810.55</u>
	\$16,225.76
Less Expenditures	<u>-</u>
Balance @ December 31, 1970	<u><u>\$16,225.76</u></u>



Yearly Operating Costs

YEAR	MILLION GALLONS TREATED	TOTAL OPERATING COSTS	COST PER MILLION GAL	COST PER LB OF BOD REMOVED
1966	682.86	\$65,868.62	\$ 96.46	13 cents
1967	802.96	72,358.82	88.87	11 cents
1968	926.85	78,488.49	84.68	12 cents
1969	963.6	97,206.18	100.88	12 cents
1970	1032.0	106,960.25	103.60	13 cents

MONTHLY OPERATING COSTS

MONTH	TOTAL EXPENDITURE	PAYROLL	CASUAL PAYROLL	FUEL	POWER	CHEMICALS	GENERAL SUPPLIES	EQUIPMENT	REPAIRS and MAINTENANCE	SUNDRY *	WATER	TRAVEL
JAN	7982.45	7788.56	-	114.44	-	-	21.68	-	-	57.77	-	-
FEB	8152.45	5498.69	-	234.49	1288.54	-	582.23	-	-	548.50	-	-
MAR	7675.38	5399.17	-	120.14	1297.76	264.91	277.69	-	-	315.75	-	-
APR	7601.31	5392.45	-	154.38	1196.64	-	305.86	87.57	162.50	301.91	-	-
MAY	8894.54	5922.70	148.07	128.14	1188.10	-	560.76	232.96	310.25	230.86	172.70	-
JUNE	7274.31	5409.33	221.65	87.98	863.41	-	217.82	46.20	207.29	171.55	-	49.08
JULY	8552.51	5244.40	80.31	57.62	1863.02	-	402.79	-	186.40	627.97	-	90.00
AUG	9395.63	7972.43	-	59.38	-	-	222.71	137.60	473.91	442.22	87.38	-
SEPT	1680.05	5357.81	91.20	73.05	949.01	-	176.74	-	(99.98)	(4867.78)	-	-
OCT	8154.00	5273.15	240.28	7.48	992.48	-	511.45	-	363.48	472.22	186.96	106.50
NOV	9292.04	5617.80	103.33	22.40	1017.71	1500.90	564.63	-	21.48	443.79	-	-
DEC	22305.58	3115.69	-	310.49	1743.74	324.90	453.63	-	799.01	15468.12	-	90.00
TOTAL	106960.25	67992.18	884.84	1369.99	12400.41	2090.71	4297.99	504.33	2424.34	14212.84	447.04	335.58

BRACKETS INDICATE CREDIT

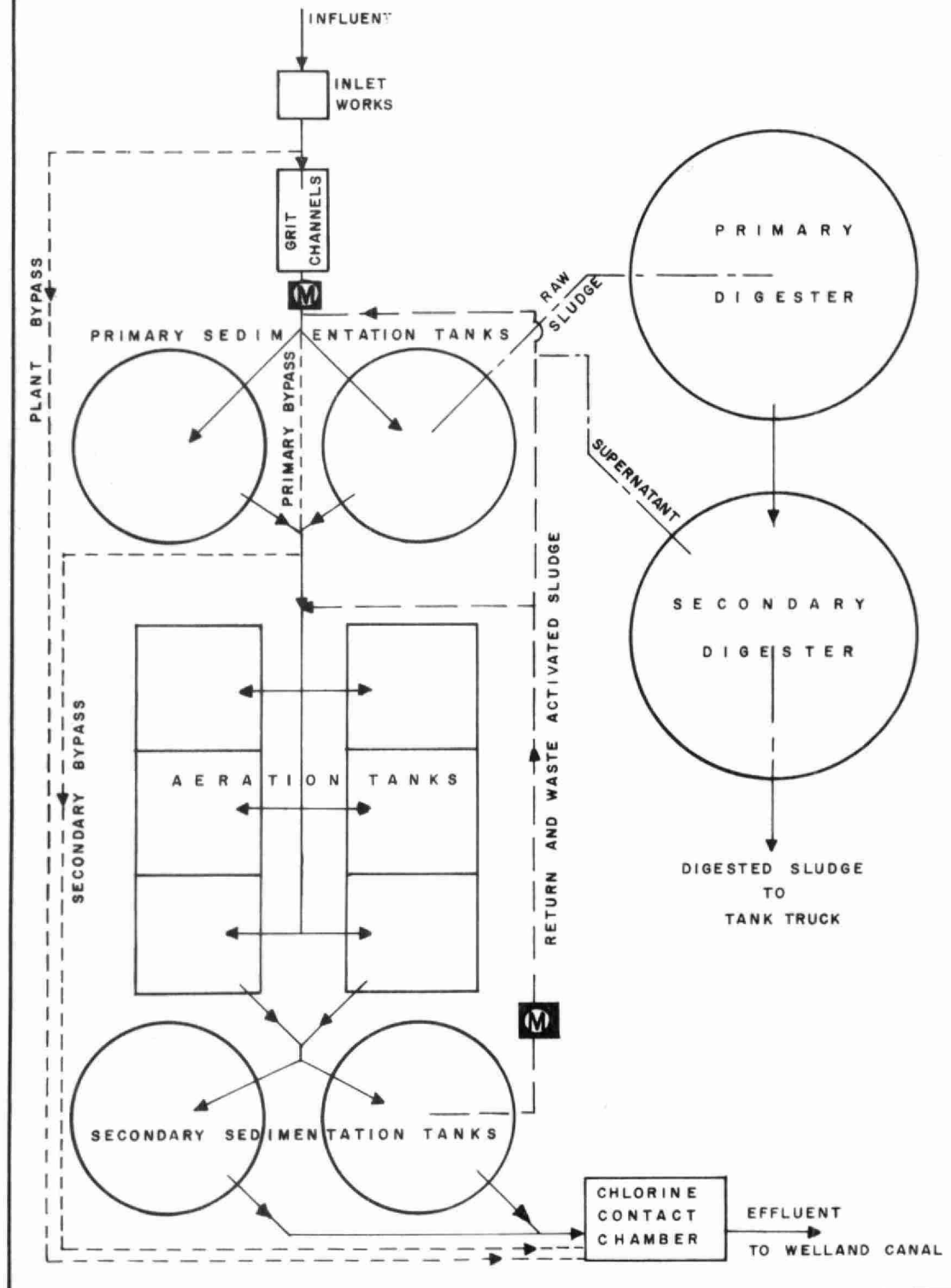
* SUNDRY INCLUDES SLUDGE HAULAGE COSTS WHICH WERE 3,630.69

WEST SIDE PLANT



PROCESS DATA

PORT COLBORNE WEST SIDE WATER POLLUTION CONTROL PLANT



DESIGN DATA

PROJECT NO.	2-0047-59	TREATMENT	Activated Sludge
DESIGN FLOW	0.90 mgd	DESIGN POPULATION	9,000
BOD - Raw Sewage	225 mg/l	SS - Raw Sewage	300 mg/l
- Removal	93%	- Removal	93%

PRIMARY TREATMENT

Screening

Type: Manually cleaned
Size: Two, 1" spacing

Grit Removal

Type: Channels
Size: Two 40' 4" x 1' 10" (838 gal)
Retention: 0.67 min (one channel)
Velocity: 1 fps

Primary Sedimentation

Type: Dorr
Size: Two 50' dia x 9' swd
(220,000 gal)
Retention: 5.9 hr
Loading: Surface, 229 gal/ft²/day
Weir, 2,860 gal/ft/day

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Six 30' x 30' x 10½' cells
(326,000 gal)
Retention: 8.8 hr

Aerators

- Six Ames Crosta Mills

Secondary Sedimentation

Type: Ames Crosta
Size: Two 45' dia x 8' (159,500 gal)
Retention: 4.24 hr
Loading: Surface, 282 gal/ft²/day
Weir, 3,200 gal/ft/day

CHLORINATION

Type: W & T
Size: Two 400 lb/day

Chlorine Contact Chamber

Size: 100,000 gal
Retention: 16 min

OUTFALL

- to Welland Canal

SLUDGE HANDLING

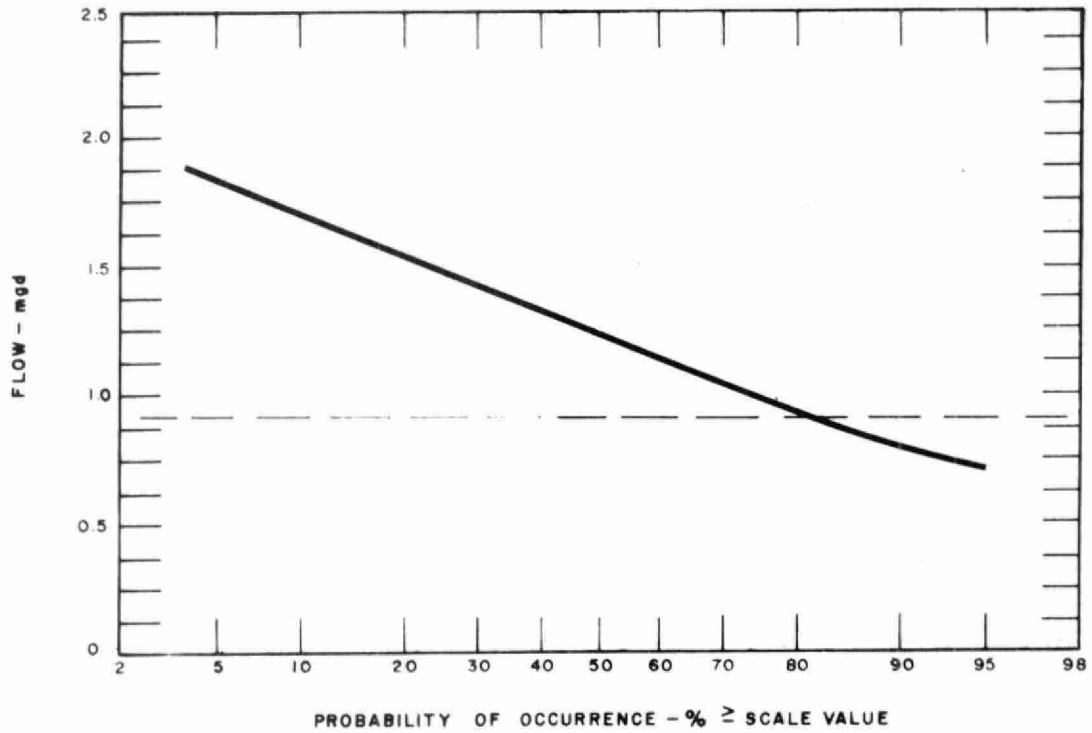
Digestion System - Two-stage

Primary --

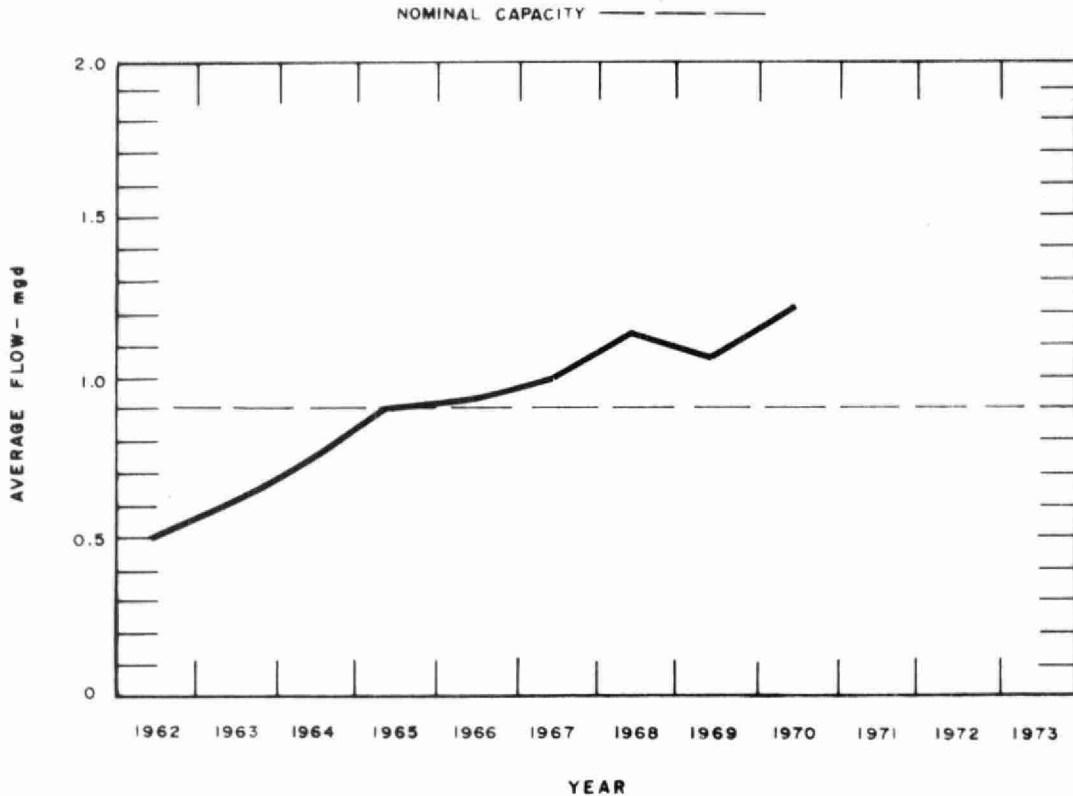
Type: Dorr, 1 draft tube mixer
Size: One 35' dia x 22' swd (21,200 cu ft or 0.132 mil gal)
Loading: 3.56 lb/cu ft/mo

Secondary --

Size: One 30' dia x 19' swd (13,400 cu ft or 83,500 gal)
Total Loading: 218 lb/cu ft/mo

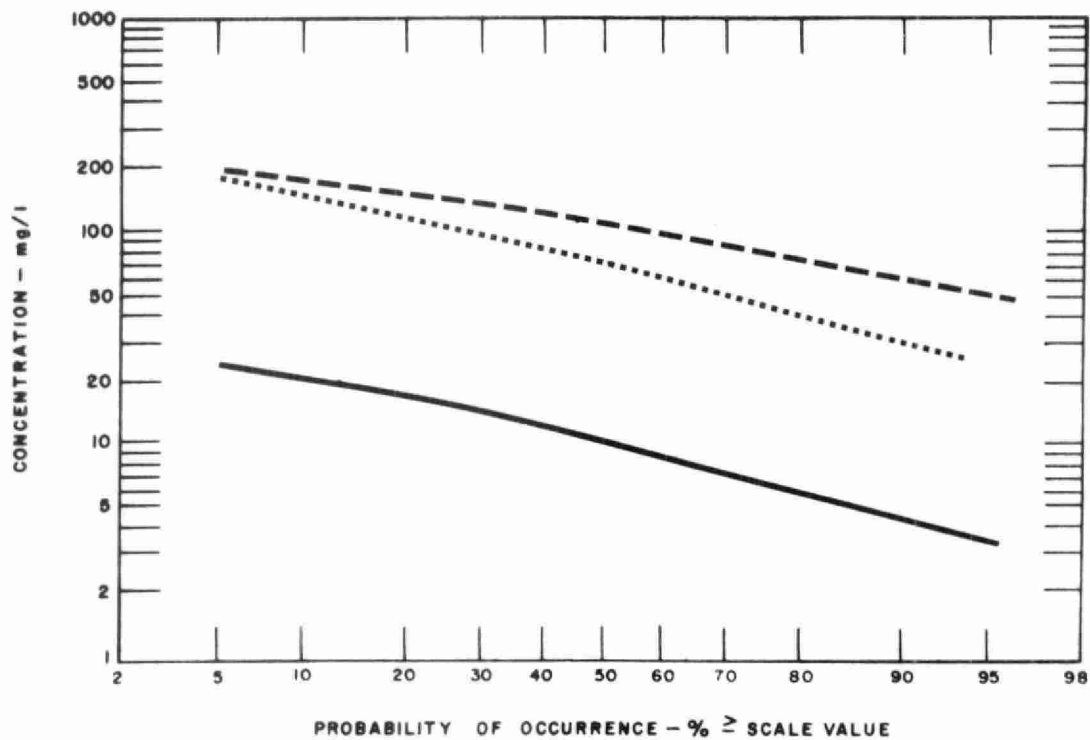


FLAWS

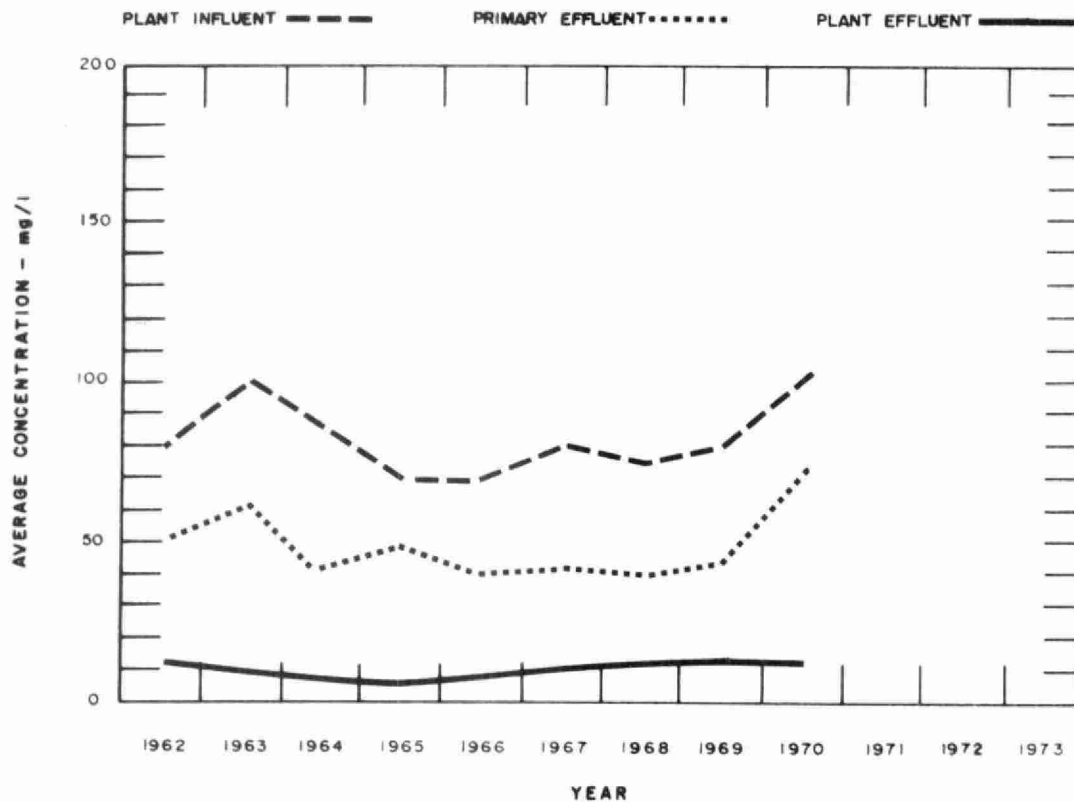


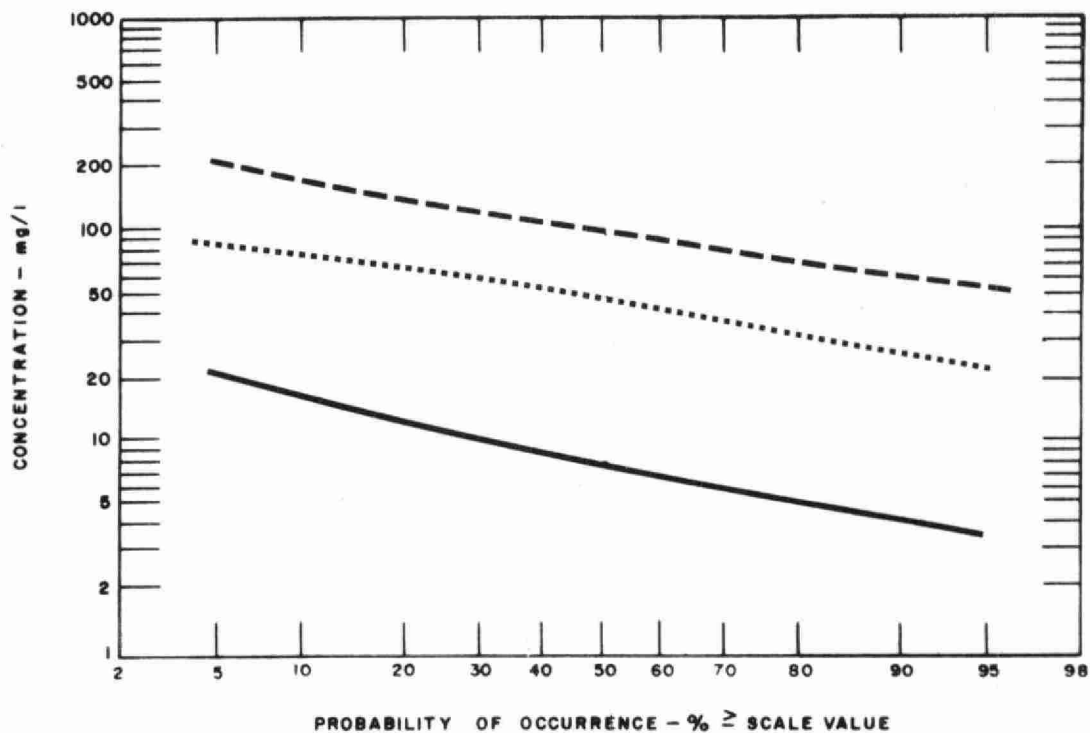
PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal	CHLORINE USED pounds	DOSAGE mg/l
JAN	33.4	1.08	2.2	.9	980	2.9
FEB	38.9	1.39	2.1	1.0	960	2.5
MAR	48.5	1.56	2.3	1.1	940	1.9
APR	43.5	1.45	2.5	.9	850	1.9
MAY	31.7	1.02	1.3	.8	950	3.0
JUNE	30.5	1.02	1.3	.8	920	3.0
JULY	35.2	1.14	1.8	.9	1060	3.1
AUG	33.2	1.08	1.6	.9	1080	3.3
SEPT	33.6	1.12	1.6	.9	940	2.8
OCT	38.2	1.23	2.2	.9	1050	2.7
NOV	41.3	1.38	1.9	1.0	1200	2.9
DEC	40.5	1.30	2.3	.8	1160	2.9
TOTAL	448.5	-	-	-	12090	-
AVERAGE	-	1.23	-	-	1010	2.7

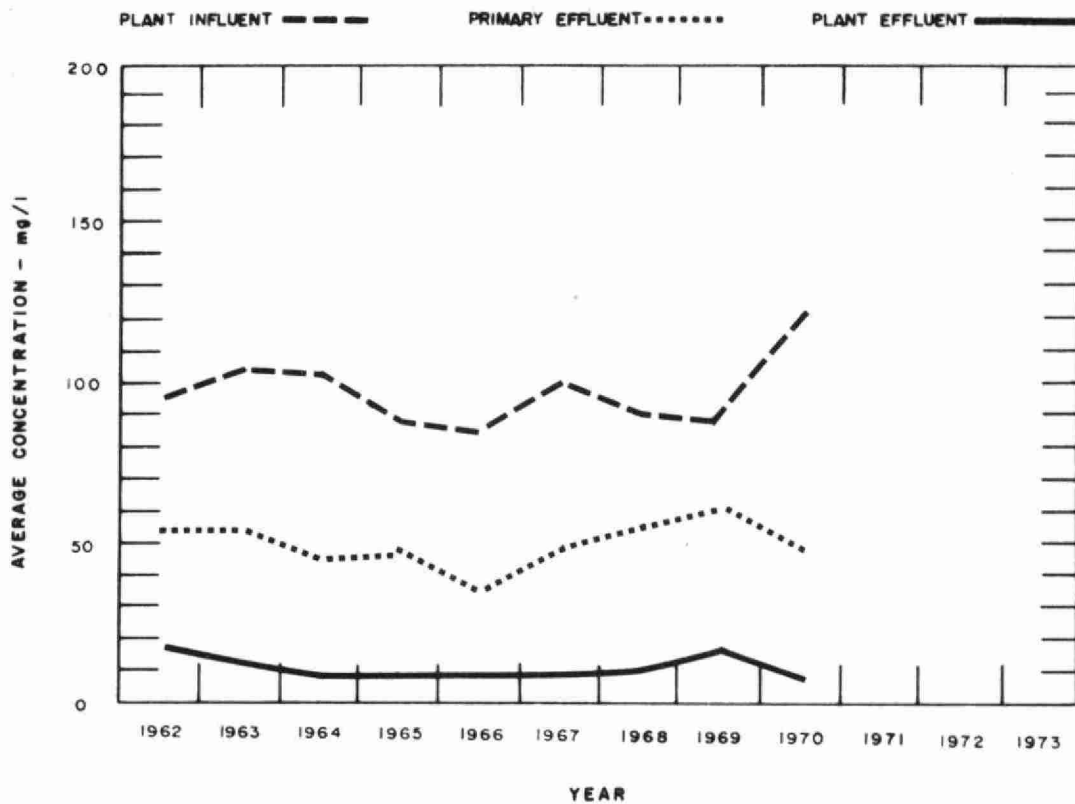


BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS



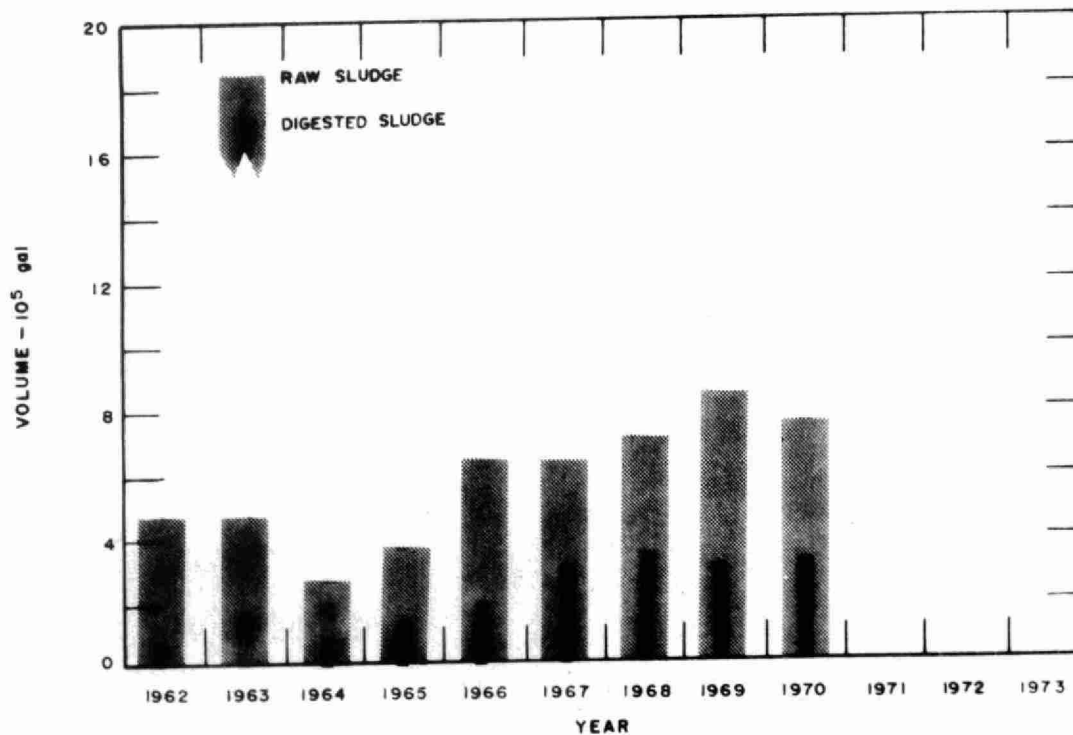
PLANT EFFICIENCY

MONTH	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS						GRIT REMOVED cu ft
	INFLUENT		EFFLUENT		REDUCTION		INFLUENT		EFFLUENT		REDUCTION		
	n	mg/l	n	mg/l	%	10 ³ pounds	n	mg/l	n	mg/l	%	10 ³ pounds	
JAN	3	118	3	15	87	34	6	111	6	18	84	31	34
FEB	6	89	6	22	86	26	6	92	6	9	91	32	14
MAR	8	91	8	6	93	41	8	94	8	5	95	43	24
APR	6	93	6	6	94	38	6	105	6	4	96	44	32
MAY	6	118	6	6	95	36	6	138	6	6	96	42	0
JUNE	6	114	6	10	91	32	5	160	5	5	97	47	20
JULY	6	115	6	5	96	39	7	105	7	8	92	34	0
AUG	1	65	1	7	89	19	2	101	2	9	93	30	0
SEPT	8	107	8	7	93	34	7	96	7	10	90	29	0
OCT	5	72	5	7	90	25	6	196	6	11	94	71	54
NOV	4	133	4	19	86	47	5	154	5	7	95	61	20
DEC	4	104	4	14	87	36	4	114	4	8	93	43	0
TOTAL	63	-	63	-	-	407	68	-	68	-	-	507	198
AVERAGE	-	103	-	10	90	34	-	121	-	8	93	42	-

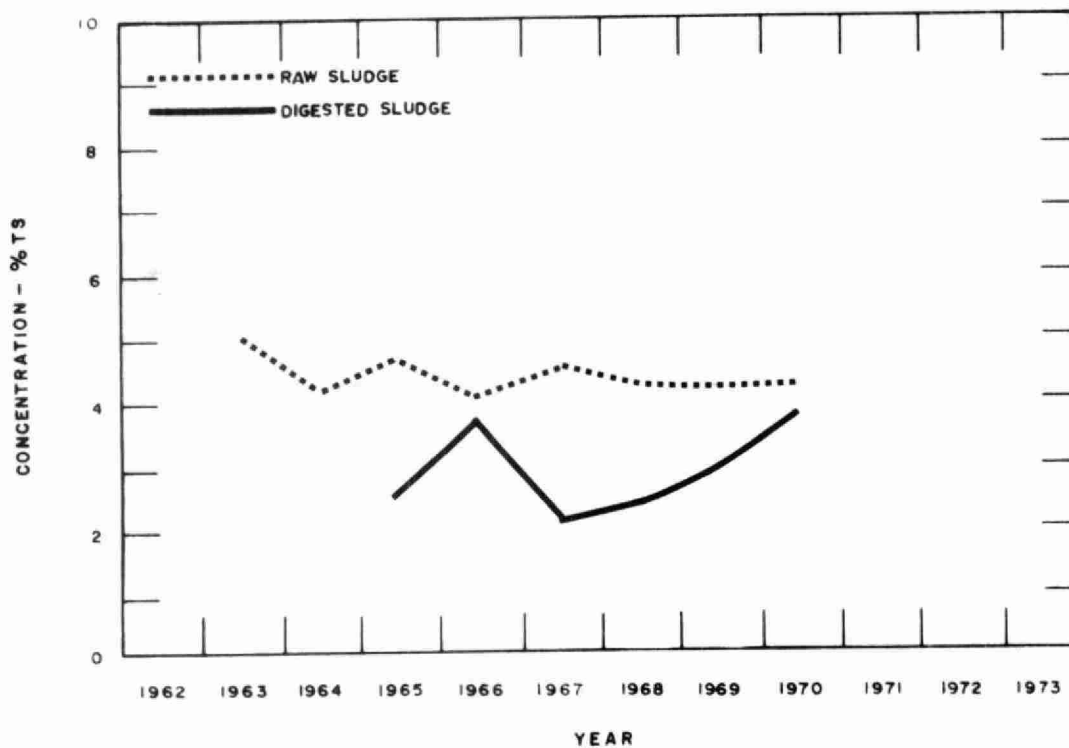
NOTE - n is the number of samples taken

AERATION

MONTH	AVG DAILY FLOW mil gal	AERATION INF.		SECONDY. EFF.		MLSS CONCN mg/l	F/M lb BOD lb MLSS	AIR USED 1000 cu ft lb BOD	WASTE SLUDGE lb/DAY
		BOD mg/l	SS CONCN mg/l	BOD mg/l	SS CONCN mg/l				
JAN	1.1	83	43	15	18	1200	.5	-	-
FEB	1.4	55	28	22	9	1300	.4	-	-
MAR	1.6	66	37	6	5	870	.8	-	-
APR	1.4	58	41	6	4	1280	.4	-	-
MAY	1.0	91	49	6	6	1490	.4	-	-
JUNE	1.0	84	60	10	5	1500	.4	-	-
JULY	1.1	93	60	5	8	1700	.4	-	-
AUG	1.1	44	47	7	9	1490	.2	-	-
SEPT	1.1	72	56	7	10	1620	.3	-	-
OCT	1.2	40	53	7	11	1800	.2	-	-
NOV	1.4	101	67	19	7	1520	.6	-	-
DEC	1.3	72	43	14	8	1230	.5	-	-
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.2	73	48	10	8	1420	.4	-	-



DIGESTION



SLUDGE DIGESTION and DISPOSAL

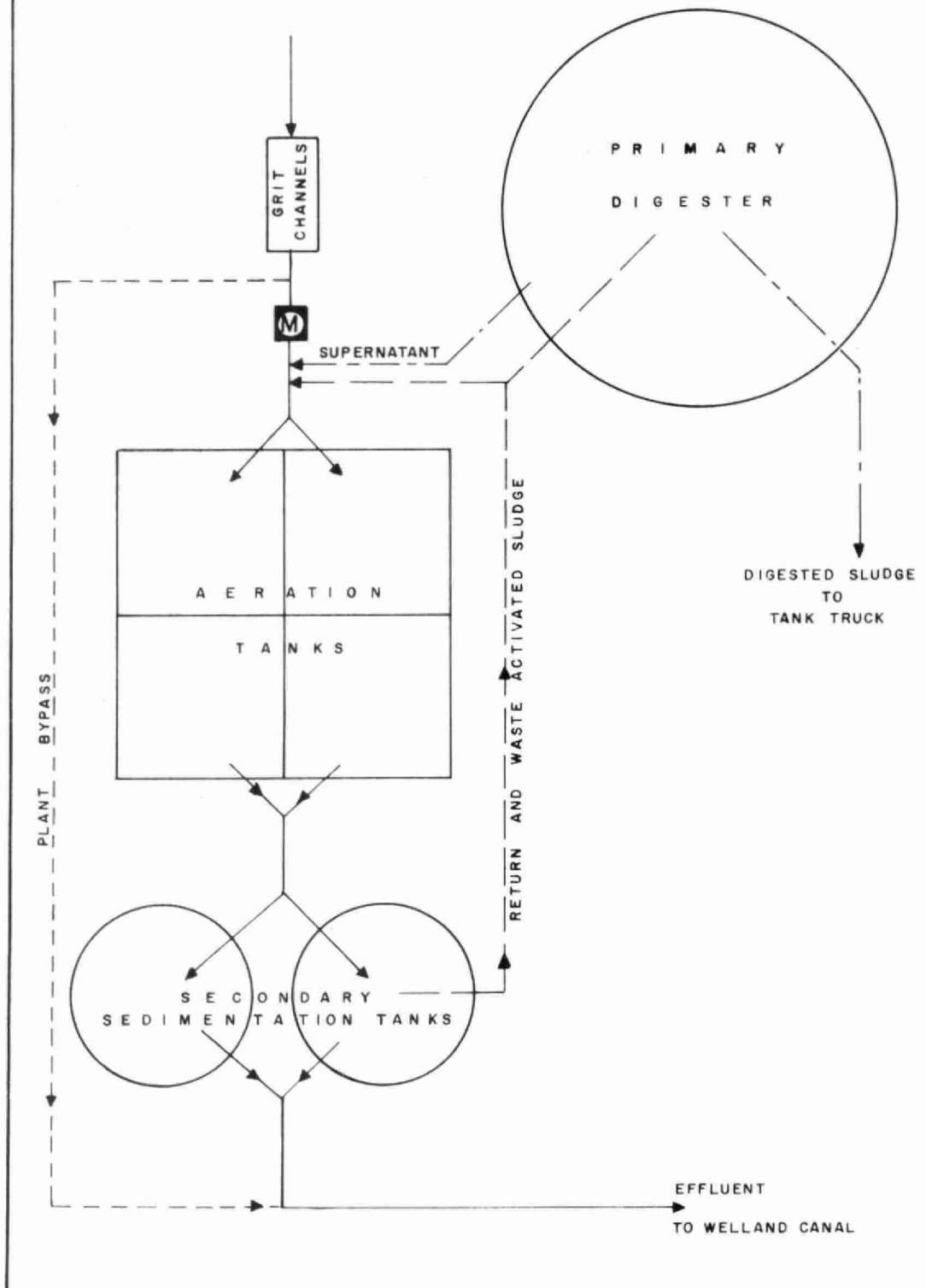
MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME	TOTAL SOLIDS	VOL SOLIDS	VOLUME	TOTAL SOLIDS	VOL SOLIDS	VOLUME	TOTAL SOLIDS	DEWATERED	LIQUID
	10 ³ gal	%	%	10 ³ gal	%	%	10 ³ gal	%	cu yd	cu yd
JAN	44	5.6	84	34	4.3	63	19	2.7	-	201
FEB	72	3.7	82	30	3.7	64	26	1.9	-	176
MAR	74	3.8	81	25	3.2	66	44	1.6	-	151
APR	51	4.5	80	15	3.8	63	31	1.4	-	88
MAY	79	4.1	81	47	3.4	63	41	1.3	-	277
JUNE	66	4.3	78	30	3.2	63	35	1.4	-	176
JULY	65	4.2	76	43	3.1	61	23	1.6	-	258
AUG	65	5.0	78	30	-	-	44	-	-	176
SEPT	59	4.3	74	15	-	-	44	1.6	-	88
OCT	61	6.1	63	30	4.1	58	48	2.1	-	176
NOV	62	5.0	74	30	-	-	36	2.2	-	176
DEC	65	5.0	72	30	5.9	53	35	1.7	-	176
TOTAL	763	-	-	359	-	-	416	-	-	2119
AVERAGE	64	4.6	77	30	3.9	62	35	1.8	-	177

EAST SIDE PLANT



PROCESS DATA

PORT COLBORNE EAST SIDE WATER POLLUTION CONTROL PLANT



DESIGN DATA

PROJECT NO.

2-0047-59

TREATMENT

Activated Sludge

DESIGN FLOW 0.85 mgd

PRIMARY TREATMENT

Screening

- Two at head of grit channels

Grit Removal

Type: Channels, manually cleaned
Size: Two 15' long

Comminution

- One Jones-Atwood

Primary Sedimentation

- Not provided

SECONDARY TREATMENT

Aeration Tanks

Type: Mechanical
Size: Four 30' x 30' x 16' (276,000 gal)
Retention: 7.8 hr

Aerators

- Four Ames Crosta

Secondary Sedimentation

Type: Ames Crosta
Size: Two 30' dia x 8' swd (70,400 gal)
Retention: 2.0 hr
Loading: Surface, 600 gal/ft²/day
Weir, 4,520 gal/ft/day

CHLORINATION

- not provided

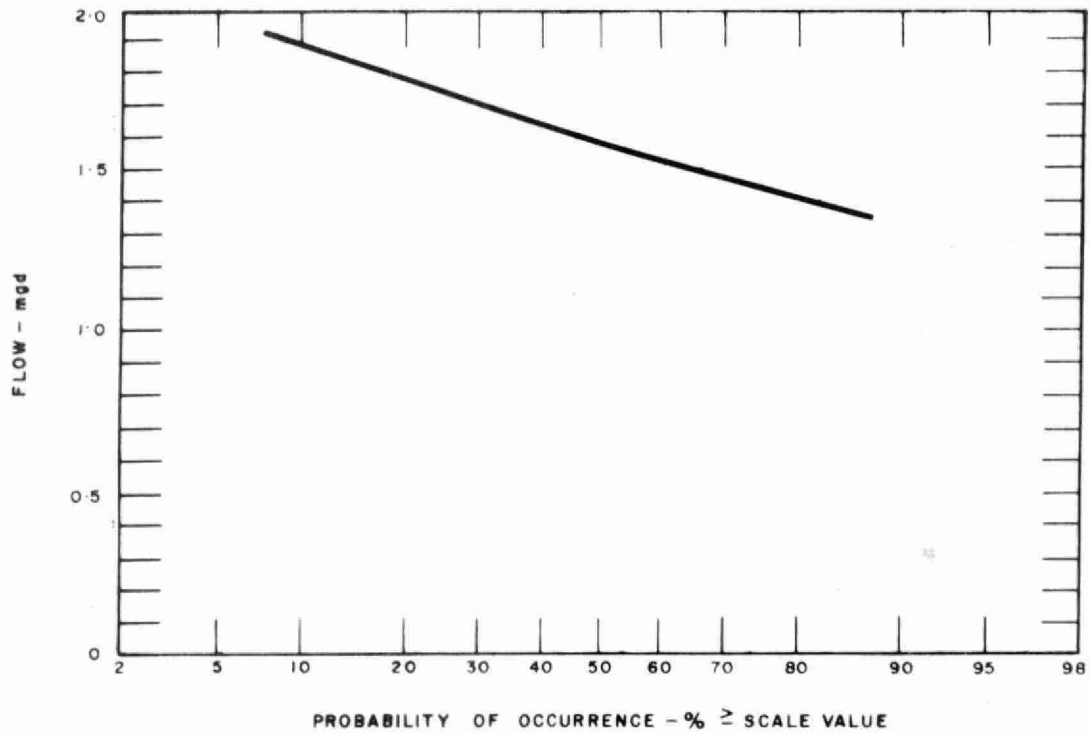
OUTFALL

- to Welland Canal

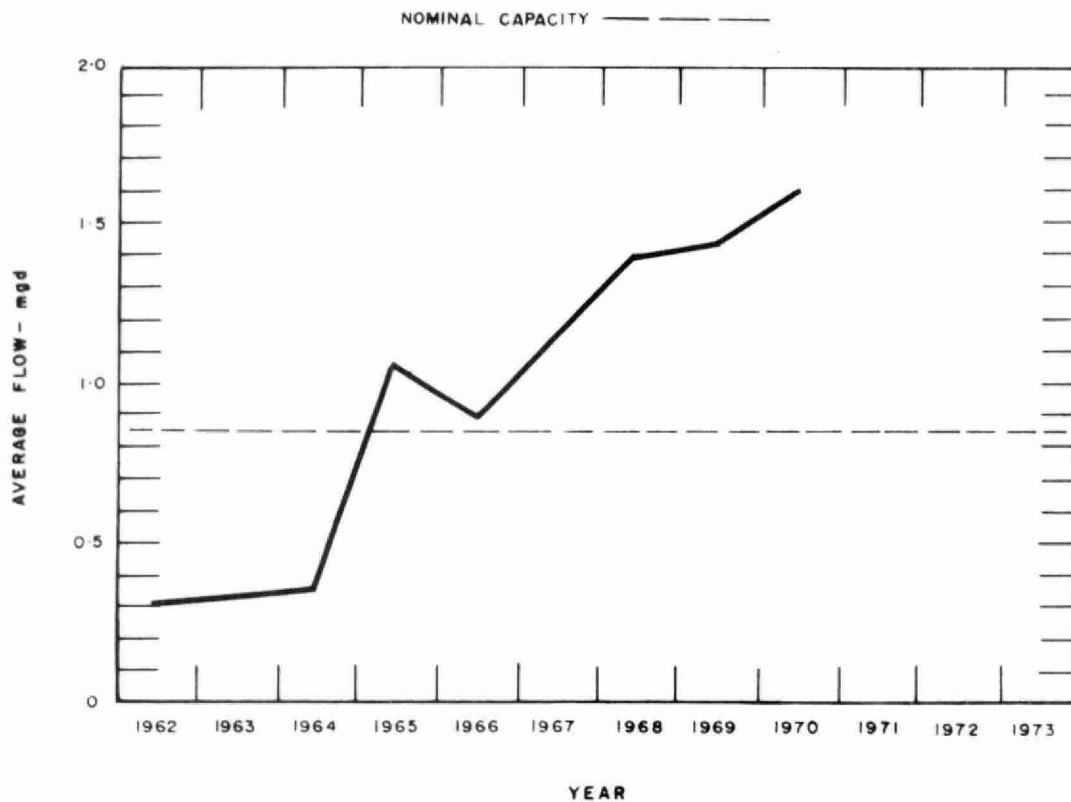
SLUDGE HANDLING

Digestion System - Single-stage

Type: PFT mixed by recirculation
Size: One 50' dia x 23' swd (44,800 cu ft
or 0.28 mil gal)

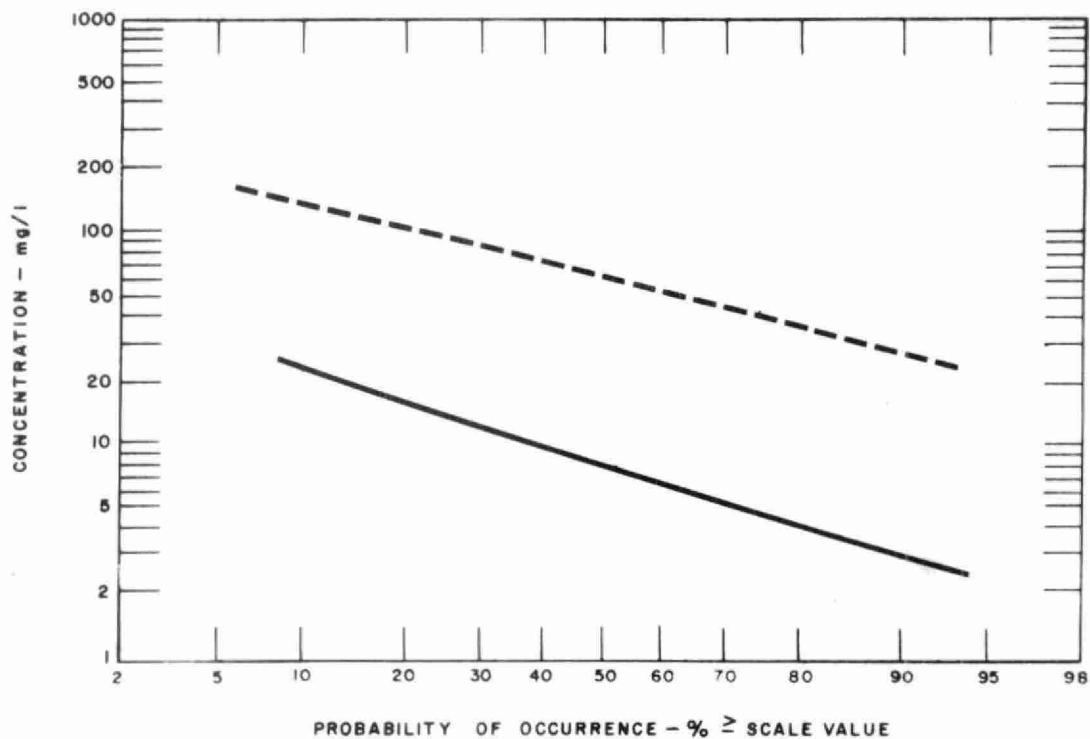


FLAWS

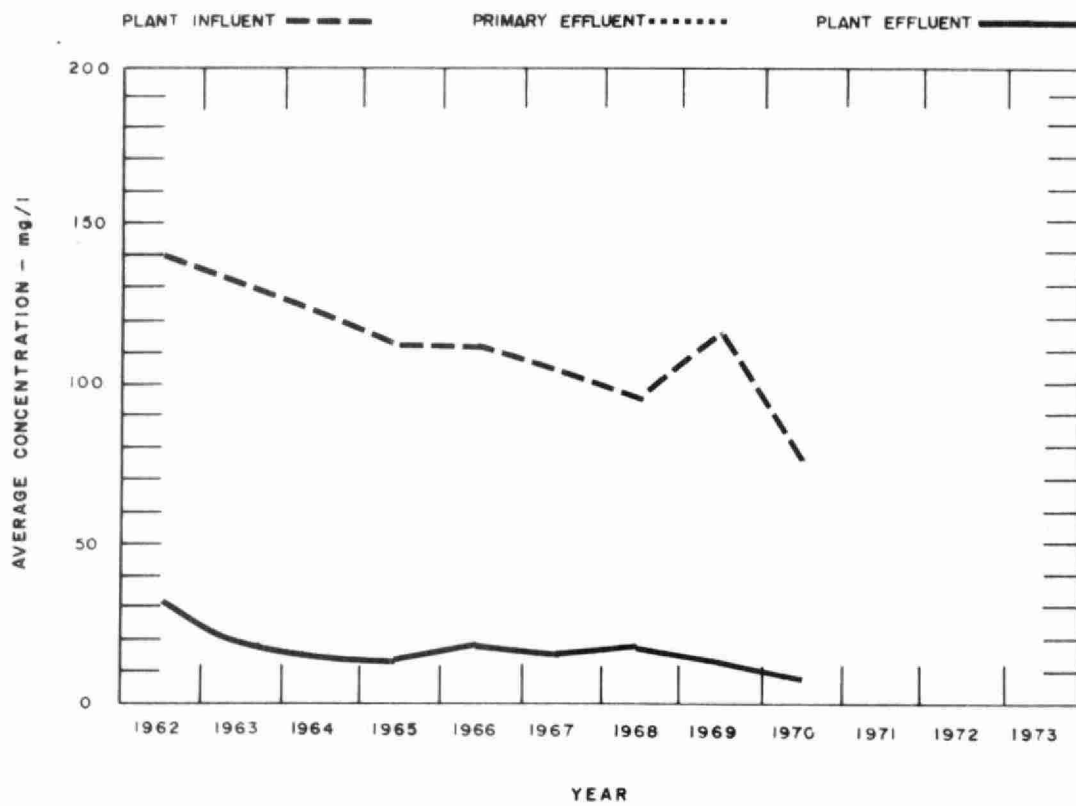


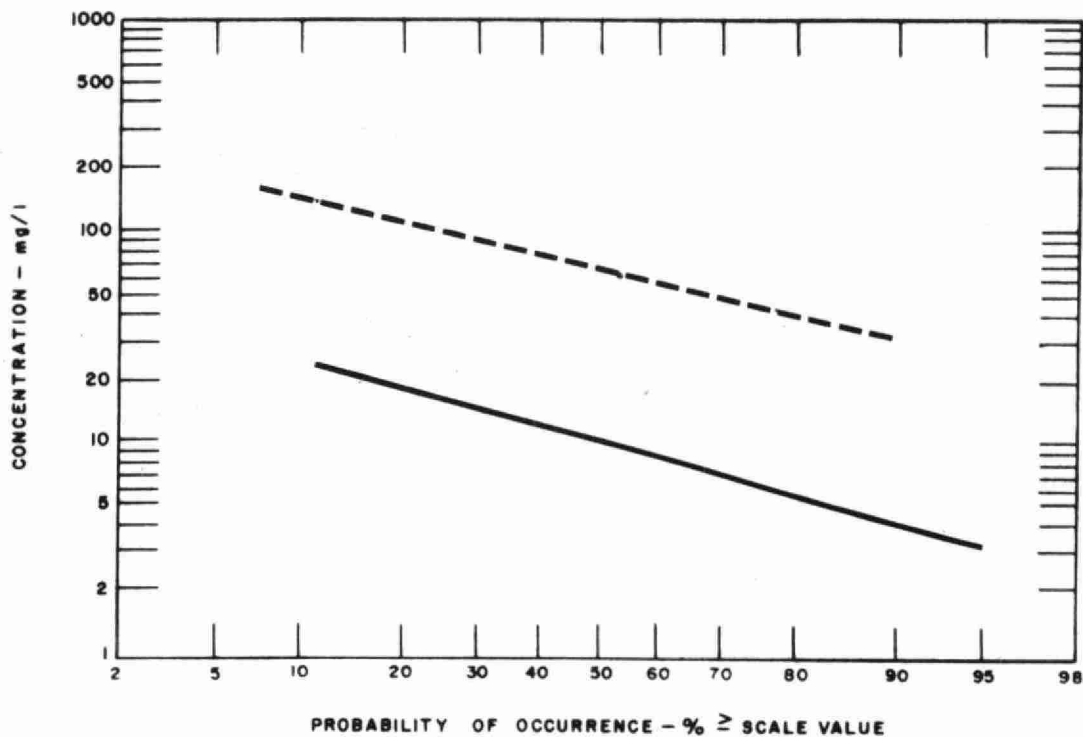
PLANT FLOWS and CHLORINATION

MONTH	TOTAL FLOW mil gal	AVERAGE DAILY FLOW mil gal	MAXIMUM DAILY FLOW mil gal	MINIMUM DAILY FLOW mil gal	CHLORINE USED	DOSAGE mg/l
JAN	50.2	1.62	2.0	1.3	0	0
FEB	51.5	1.84	2.0	1.7	0	0
MAR	56.1	1.80	2.0	1.6	0	0
APR	48.4	1.61	2.0	1.4	0	0
MAY	45.3	1.46	1.8	1.3	0	0
JUNE	42.1	1.40	1.7	1.3	0	0
JULY	47.6	1.54	2.0	1.2	0	0
AUG	46.6	1.50	1.8	1.4	0	0
SEPT	45.5	1.52	2.0	1.4	0	0
OCT	48.0	1.55	2.0	1.4	0	0
NOV	51.6	1.72	2.0	1.5	0	0
DEC	50.6	1.63	2.0	1.4	0	0
TOTAL	583.5	-	-	-	0	0
AVERAGE	-	1.60	1.9	1.4	0	0

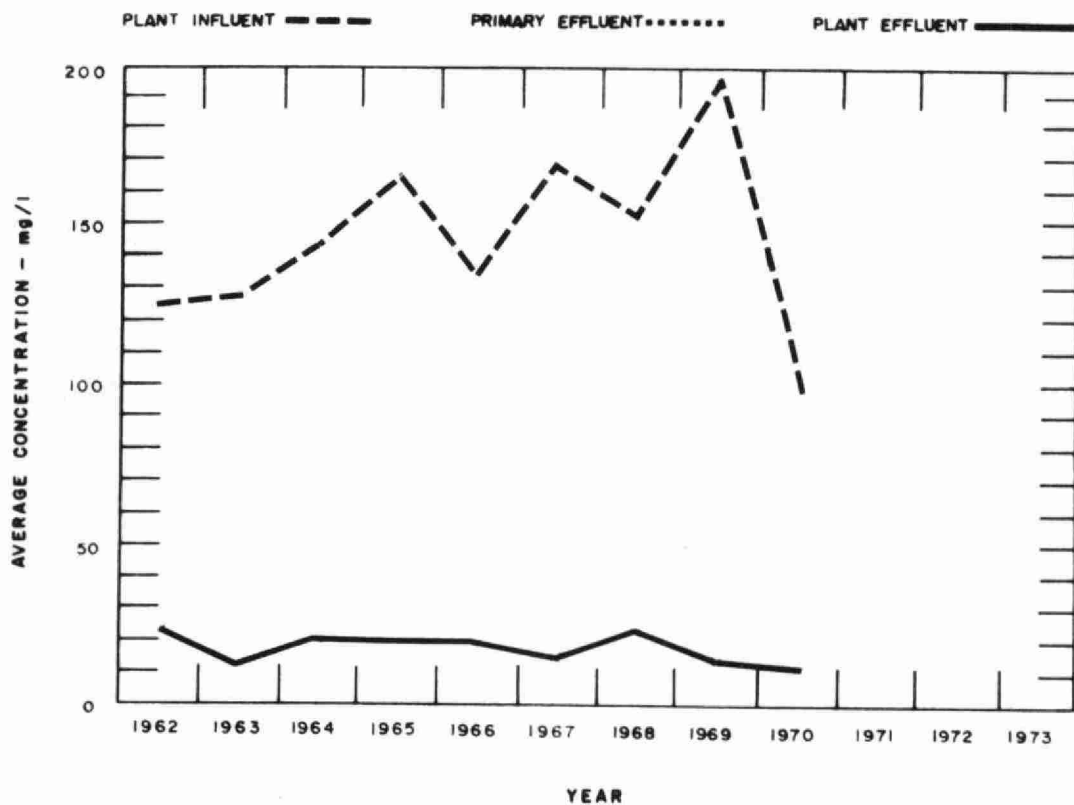


BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS



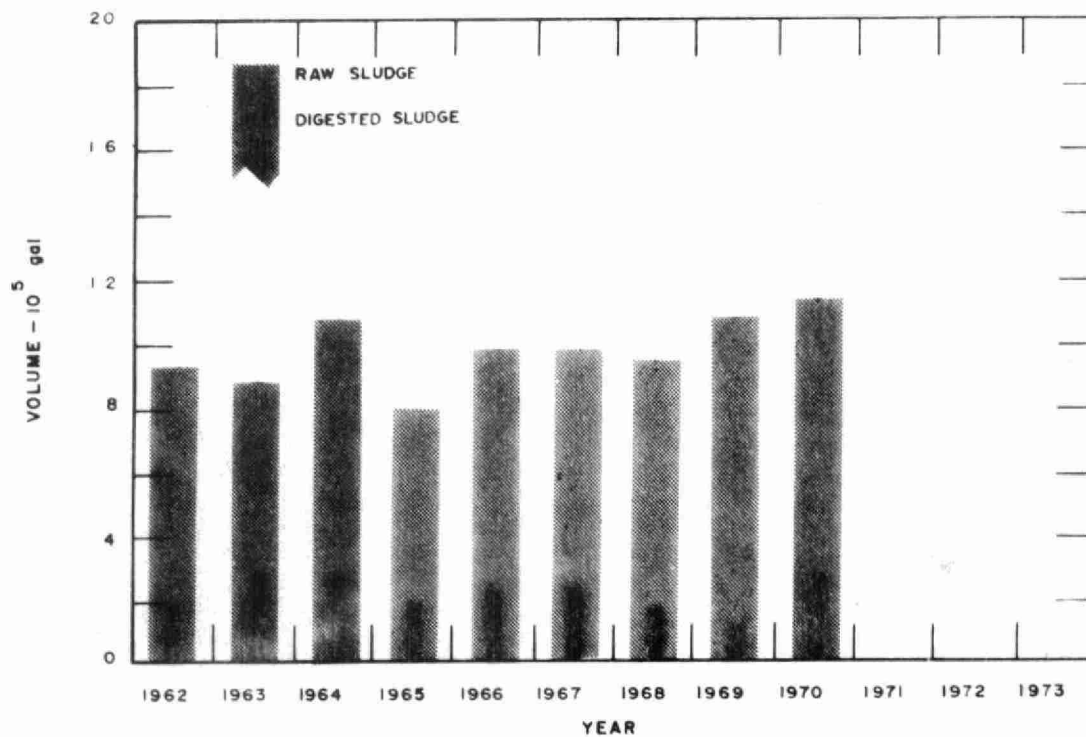
PLANT EFFICIENCY

MONTH	BIOCHEMICAL OXYGEN DEMAND						SUSPENDED SOLIDS						GRIT REMOVED cu ft
	INFLUENT		EFFLUENT		REDUCTION		INFLUENT		EFFLUENT		REDUCTION		
	n	mg/l	n	mg/l	%	10 ³ pounds	n	mg/l	n	mg/l	%	10 ³ pounds	
JAN	2	55	2	9	84	23	6	67	6	20	70	24	38
FEB	6	48	5	14	71	18	6	61	6	17	72	23	53
MAR	8	84	8	7	92	43	8	85	8	12	86	41	40
APR	6	54	6	6	89	23	6	89	6	13	85	37	58
MAY	6	61	6	4	93	26	6	126	6	11	91	52	46
JUNE	6	89	6	8	91	34	5	165	5	13	92	64	92
JULY	5	41	5	6	85	17	6	42	6	8	81	16	80
AUG	1	190	1	3	98	87	2	188	2	7	96	84	82
SEPT	8	53	8	8	85	20	7	73	7	8	89	30	94
OCT	5	166	5	19	89	70	6	143	6	14	90	62	34
NOV	4	107	4	17	84	46	5	115	5	6	95	56	64
DEC	4	83	4	11	87	36	4	120	4	6	95	58	62
TOTAL	61	-	60	-	-	443	67	-	67	-	-	544	743
AVERAGE	-	77	-	9	88	37	-	99	-	12	88	45	62

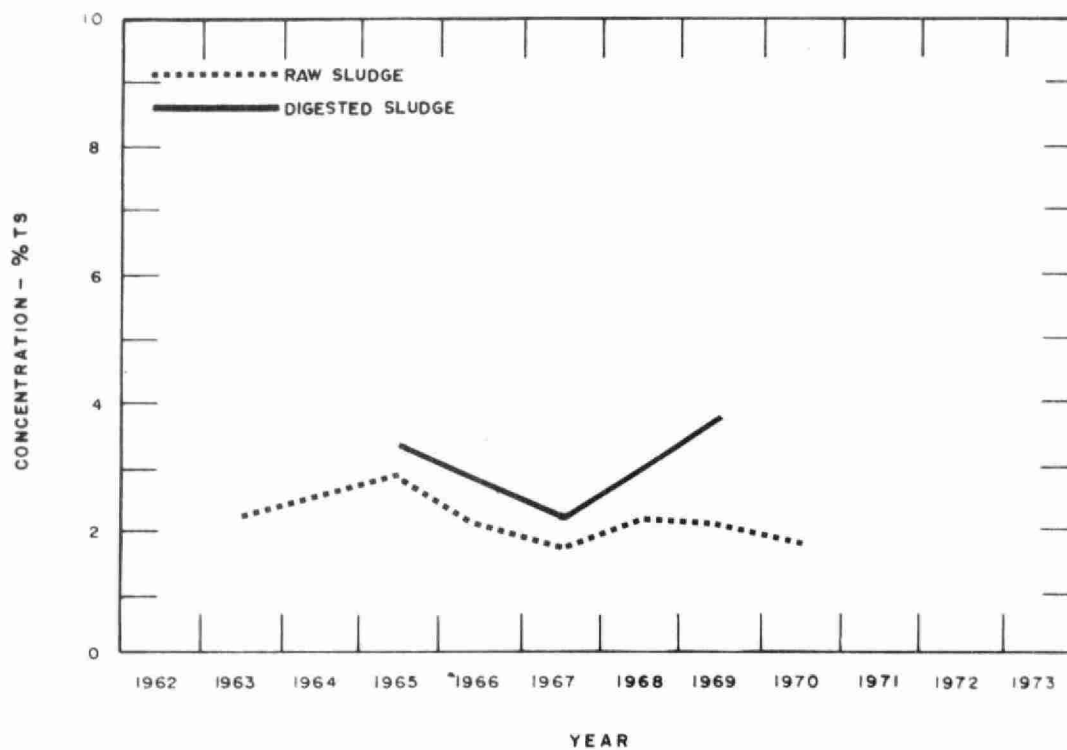
NOTE - n is the number of samples taken

AERATION

MONTH	AVG DAILY FLOW mil gal	AERATION INF.		SECONDY. EFF.		MLSS CONCN mg/l	F/M lb BOD lb MLSS	AIR USED 1000 cu ft lb BOD	WASTE SLUDGE lb/DAY
		BOD	SS	BOD	SS				
		mg/l	mg/l	mg/l	mg/l				
JAN	1.6	55	67	9	20	2420	.13	-	480
FEB	1.8	48	61	14	17	1980	.16	-	570
MAR	1.8	84	85	7	12	1930	.28	-	570
APR	1.6	54	89	6	13	2230	.14	-	650
MAY	1.5	61	126	4	11	2330	.14	-	660
JUNE	1.4	89	165	8	13	2690	.16	-	720
JULY	1.5	41	42	6	8	3020	.07	-	580
AUG	1.5	190	188	3	7	2970	.34	-	600
SEPT	1.5	53	73	8	8	2920	.10	-	490
OCT	1.6	166	143	19	14	2860	.34	-	540
NOV	1.7	107	115	17	6	2680	.25	-	410
DEC	1.6	83	120	11	6	2810	.17	-	450
TOTAL	-	-	-	-	-	-	-	-	-
AVERAGE	1.6	77	99	9	12	2570	.19	-	560



DIGESTION



SLUDGE DIGESTION and DISPOSAL

MONTH	RAW SLUDGE			DIGESTED SLUDGE			SUPERNATANT		SLUDGE DISPOSAL	
	VOLUME	TOTAL SOLIDS	VOL SOLIDS	VOLUME	TOTAL SOLIDS	VOL SOLIDS	VOLUME	TOTAL SOLIDS	DEWATERED	LIQUID
	10 ³ gal	%	%	10 ³ gal	%	%	10 ³ gal	%	cu yd	cu yd
JAN	92	1.6	79	30	-	-	90	1.1	-	176
FEB	80	2.0	82	8	-	-	71	1.3	-	50
MAR	93	1.9	76	21	-	-	94	1.2	-	126
APR	89	2.2	78	19	-	-	94	1.4	-	113
MAY	92	1.9	78	26	-	-	96	-	-	151
JUNE	90	2.4	75	0	-	-	86	1.5	-	0
JULY	94	1.9	71	17	-	-	90	1.5	-	101
AUG	123	1.5	68	34	-	-	103	-	-	202
SEPT	98	1.5	69	36	-	-	92	-	-	214
OCT	120	1.4	71	30	-	-	124	-	-	176
NOV	90	1.3	73	45	-	-	89	-	-	265
DEC	93	1.5	73	26	-	-	94	1.3	-	151
TOTAL	1154	-	-	292	-	-	1123	-	-	1725
AVERAGE	96	1.8	74	-	-	-	94	1.3	-	157

Date Due

[illegible]

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